European Agency for Safety and Health at Work

EU GUIDANCE

LONG COVID: IDENTIFICATION AND WORK ABILITY ASSESSMENT, WORKPLACE ADAPTATION AND REHABILITATION

A practical short guide for occupational physicians

Anucha – Adobe Stock

Contents

Identifying long COVID and its impact in the workplace 3
From symptoms to a diagnosis 3
Self-rehabilitation 4
Assessing work ability 4
Rehabilitation and workplace adjustments 7
Fatigue 7
Post-exertional symptom exacerbation 7
Orthostatic intolerance 7
Breathing impairment 8
Arthralgia 8

Sleep disturbances 8
Other symptoms 8
Cognitive and mental health issues....11
Consideration without discrimination 13
The return-to-work plan and rehabilitation 14
References 14

Authors: George D. Vavougios, Vasileios T. Stravrou, Konstantinos I. Gourgoulianis, University of Thessaly, Greece.

Project management and editing: Elke Schneider - European Agency for Safety and Health at Work (EU-OSHA).

This guide was commissioned by the European Agency for Safety and Health at Work (EU-OSHA). Its contents, including any opinions and/or conclusions expressed, are those of the authors alone and do not necessarily reflect the views of EU-OSHA.

Identifying long COVID and its impact in the workplace

This guidance document is intended for the workplace level, to support occupational physicians and occupational health services in their efforts to ease return to work for workers affected by long COVID. It provides advice on the assessment of long COVID symptoms with a perspective on rehabilitation of workers and return to work despite lasting symptoms. It complements a longer discussion paper[1] and OSHwiki article[2] on the rehabilitation of workers affected by long COVID and a short guide that supports employers[3]. The European Agency for Safety and Health at Work (EU-OSHA) has published a review that presents an overview of long COVID and its impact on the workplace[4] and two guides for managers[5] and workers[6] respectively that provide advice on how to cooperate to facilitate return to work for workers affected by long COVID.

From symptoms to a diagnosis

Workers may experience long COVID as any combination of symptoms, with more than 200 reported in scientific literature, potentially affecting any organ in the human body.

A diagnosis of long COVID is usually made by a physician, in most cases a general practitioner (GP). Occupational physicians and health services may contribute to diagnosing and planning the treatment of those conditions that affect return to work and could help workers identify the steps for further evaluation (for example, by a long COVID specialist service or their GP). They should therefore be familiar with long COVID symptoms and be able to discuss their impact and potential meaning with the affected worker. It is important that occupational physicians and rehabilitation specialists regularly update their practices to identify long COVID and support effective rehabilitation as early as possible, as knowledge on both is constantly evolving.

After a diagnosis of long COVID is made, there are several steps to be taken.

- A doctor's notice may suggest further medical action (e.g. further medical exams or referral to a specialised long COVID centre). Furthermore, it may result in a 'sick note' that justifies the absence from work and defines its duration.
- Workers normally must notify their employer of a potential absence. An occupational health service or occupational physician may facilitate this communication, explaining that long COVID may last weeks or more, especially if untreated, and that it may relapse. For patients requiring rehabilitation, this may mean whole days of absence or a longer period off work.
- Long COVID may require rehabilitation in specialised services. Workers and managers should agree upon a communication plan, especially if absence from work is required for rehabilitation. Occupational physicians can support this communication.
- Reasonable workplace accommodations may be required at some point and workplace risk assessments will have to be revised.
- As a general principle, returning to work should not be considered until an affected worker is able to manage home activities. An early return to previous activity may fail and lead to negative self-perceptions, symptom deterioration and job loss.

The specific form of rehabilitation is different for each patient. For workers, the aim is to recover skills and abilities that will keep them employed. At the enterprise level, all stakeholders (employers, workers and worker representatives, OSH professionals) should familiarise themselves with rehabilitation

[1] EU-OSHA – European Agency for Safety and Health at Work, *Long COVID: worker rehabilitation, assessment of work ability and return to work support, 2025.* Available at: https://osha.europa.eu/en/publications/long-covid-worker-rehabilitation-assessment-work-ability-and-return-work-support

[2] OSH wiki article available at: Identification of long COVID, assessment of work ability, rehabilitation and workplace adaptations

[3] EU-OSHA – European Agency for Safety and Health at Work**,** *Long COVID: assessing work ability, adapting the workplace and supporting rehabilitation – A practical guide for the workplace,* 2025. Available at: https://osha.europa.eu/en/publications/long-covid-assessing-work-ability-adapting-workplace-and-supporting-rehabilitation-practical-short-guide-workplace

[4] EU-OSHA – European Agency for Safety and Health at Work, *Impact of Long Covid on workers and workplaces and the role of OSH*, 2022. Available at: https://osha.europa.eu/en/publications/impact-long-covid-workers-and-workplaces-and-role-osh

[5] EU-OSHA – European Agency for Safety and Health at Work, *COVID -19 infection and long COVID – guide for managers*, 2021. Available at: https://osha.europa.eu/en/publications/covid-19-infection-and-long-covid-guide-managers

[6] EU-OSHA – European Agency for Safety and Health at Work, *COVID-19 infection and long COVID – guide for workers*, 2021. Available at: https://osha.europa.eu/en/publications/covid-19-infection-and-long-covid-guide-workers

concepts that may come up during discussions of a return-to-work plan or on how to modify and adapt the workplace. The role of occupational medicine is especially relevant and complex. Success relies on the interplay between the worker, the employer, other involved health service providers and professionals, as well as occupational safety experts.

Self-rehabilitation

Some long COVID patients may experience either light or manageable symptoms that will not require rehabilitation in a specialised centre. For these patients, self-management may be appropriate. Self-rehabilitation exercises may be performed at a dedicated place at work. Occupational physicians can help in designing a plan and advising the employer on required rest periods and the workspace needed for self-rehabilitation.

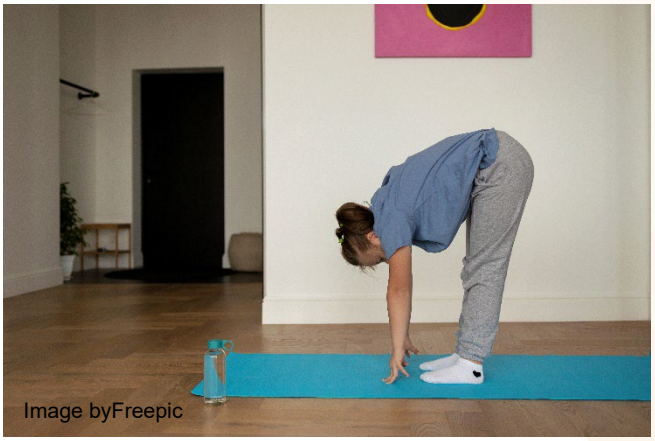


Image byFreepic

Self-rehabilitation relies on self-assessment of the limitations, and education and training in techniques that preserve energy and improve mobility and independence in everyday life activities. The energy level required for work tasks needs to be assessed. The World Health Organisation (WHO) has published self-rehabilitation guidelines for individuals who are recovering from a COVID-19 infection and affected by long COVID[7] that include exercises and practical advice tailored to specific symptoms. Suggestions from this guide are included in the discussion paper on rehabilitation of workers affected by long COVID.

Self-rehabilitation needs to be regularly reviewed, just as regular rehabilitation. The WHO's guide provides a symptom diary that can help document progress. An affected worker should discuss the symptoms with their doctor and with the occupational physician if they concern work fitness.

Self-management of symptoms should be used with caution. There are several conditions that should prompt the worker to stop and seek medical advice, for example if:

- breathlessness worsens or does not improve, despite simple attempts to alleviate it;
- breathlessness occurs with minimal activity and it is not easily alleviated, e.g. with the help of body positioning;
- exercise brings about new symptoms such as nausea, chest pain or tightness, dizziness, intense sweatiness or shortness of breath;
- mental faculties do not improve (or even deteriorate);
- eating and drinking remain difficult and do not improve after adopting suggested accommodations; and
- mood disorders worsen, including anxiety or depression.

Assessing work ability

There is no specific marker or index formally adopted and suggested by either the WHO or the EU to assess overall work ability. Typically, long COVID is diagnosed by a physician based on observed impairments and an individualised assessment, and an estimation of whether the patient is fit to work is made. The WHO Case Report Form for Post COVID condition[8] is a useful tool for documenting a wide range of symptoms that may be due to long COVID. The use of standardised scales should complement other medical tests and results could urge further action (for example, a severely impaired

[7] World Health Organisation (2023). *Support for rehabilitation: Self-management after COVID-19 related illness.* World Health Organisation Regional Office for Europe. https://www.who.int/publications/m/item/support-for-rehabilitation-self-management-after-covid-19-related-illness

[8] World Health Organisation (2021). *Global COVID-19 Clinical Platform Case Report Form (CRF) for Post COVID condition (Post COVID-19 CRF).* https://www.who.int/publications/i/item/global-covid-19-clinical-platform-case-report-form-(crf)-for-post-covid-conditions-(post-covid-19-crf-)

MoCA[9] score should prompt a neurology referral and neuroimaging, even if other indices or overall work ability appear to be adequate). Table 1 provides examples of scales for the assessment.

The assessment should include:

- **A general estimation of long COVID symptoms and their severity**. The WHO's guide on long COVID rehabilitation includes a symptom tracking diary, where several long COVID symptoms and their severity can be documented and rated from 0 to 3 (0 not present, 1 slight or mild problem, 2 moderate problem, 3 severe or life disturbing).
- **An overall estimate of work ability preferably by a standardised scale, such as the Work Ability Index (WAI).**
- **Estimates of physical activity.**
- **An assessment of cognitive function, depression and anxiety.** An occupational physician can use simple cognitive screening tests (see Table 1). Cognitive impairment may also reflect an underlying condition that may be treatable (e.g. vitamin deficiency, metabolic disease, sleep disorder, etc.).
- **Where appropriate**, for example for sleepiness in professional drivers, **other measurements** may also be relevant to assess work ability.

Following these assessments, a physician (occupational physician, primary healthcare physician or a specialist at a long COVID rehabilitation service) can **determine a worker's capacity to work and provide specific goals for cognitive and physical rehabilitation**.

Workers may require re-evaluation, especially in cases where long COVID may relapse or new symptoms arise. The use of scales would allow the comparison between scores, and help to objectively document improvement or deterioration.


Image by prostooleh on Freepic

Table 1. Examples of scales assessing specific symptoms relevant to long COVID and when to consider them

Scale	When to consider it?
Work Ability Index (de Zwart et al., 2002; Ilmarinen et al., 2007)[10]	A worker's ability to perform is compromised by long COVID
6-minute walk distance test[11]	Simple measure of physical fitness to determine the need for rehabilitation

[9] See Table 1. The Montreal Cognitive Assessment (MoCA) was designed as a rapid screening instrument for mild cognitive dysfunction. It assesses different cognitive domains: attention and concentration, executive functions, memory, language, visuo-construction skills, conceptual thinking, calculations, and orientation

[10] The WAI is an instrument used in clinical occupational health and research to assess work ability during health examinations and workplace surveys. The index is determined based on the answers to a series of questions that take into consideration the demands of work, the worker's health status and resources. The worker completes the questionnaire before the interview with an occupational health professional who rates the responses according to the instructions. The WAI is a summary measure of seven items: current work ability compared with the lifetime best, work ability in relation to the demands of the job, number of current diseases diagnosed by a physician, estimated work impairment due to diseases, sick leave during the past year (12 months), own prognosis of work ability two years from now, and mental resources.

[11] The Six-Minute Walk Test (6MWT) was developed by the American Thoracic Society and it was officially introduced in 2002, accompanied by a comprehensive guideline. The distance covered over a time of six minutes is used as the outcome by which to compare changes in performance capacity. This test measures the distance that a patient can quickly walk on a flat, hard surface in a period of six minutes.

Scale	When to consider it?
30 seconds sit to stand test[12]	
Borg Rating of Perceived Exertion (RPE) Category Ratio CR-10 Scale[13] (Borg & Kaijser, 2005)	Evaluates perceived exertion during rehabilitation
Duke Activity Status Index (DASI)[14] (Hlatky et al., 1989)	Long COVID symptoms affect physical condition
Montreal Cognitive Assessment[15] (MoCA) (Nasreddine et al., 2005)	Long COVID symptoms affect cognition
Modified Borg Dyspnoea Scale[16] (Borg, 1982)	Breathlessness related to long COVID
Hamilton Rating Scale for Anxiety[17] (HAM-A) (Thompson, 2015)	Long COVID symptoms include anxiety
Hamilton Rating Scale for Depression; 6-Item Hamilton Depression Rating Scale	Long COVID symptoms include depression
Epworth Sleepiness Scale (ESS)[18] (Johns, 1991), Berlin Questionnaire (Chiu et al., 2017)[19]	Workers experiencing excessive daytime sleepiness
Visual Analogue Scale to Evaluate Fatigue Severity (VAS-F)[20] (Lee et al., 1991), Fatigue Severity Scale[21] (Krupp et al., 1989)	Workers experiencing excessive fatigue
Visual Analogue Scale Pain[22]	Workers experiencing acute and chronic pain associated with long COVID

[12] The 30 seconds sit to stand test, also known as the 30-second chair stand test (30CST), is for testing leg strength and endurance in adults. The 30-second chair stand involves recording the number of stands a person can complete in 30 seconds.

[13] Borg CR-10 RPE scale is a scale that evaluates perceived exertion during rehabilitation and has been validated against objective measures of exercise intensity. The Borg CR-10 scale rates exertion from 0 (no exertion at all) to 10 (maximum exertion).

[14] The Duke Activity Status Index is an assessment tool used to evaluate the functional capacity of patients with cardiovascular disease, such as coronary artery disease, myocardial infarction and heart failure. It is a 12-item questionnaire that assesses daily activities such as personal care, ambulation, household tasks, sexual function and recreation with respective metabolic costs. Each item has a specific weight based on the metabolic cost (MET).

[15] See footnote 9

[16] The Modified Borg Dyspnoea Scale is a self-reported measure of breathlessness. The patient is asked to rate the severity of the difficulty they have in breathing, and is rated from 0 (None) to 10 (Maximal).

[17] The Hamilton Rating Scale for Anxiety (HAM-A) was one of the first rating scales developed to measure the severity of anxiety symptoms and is still widely used in clinical and research settings. The scale consists of 14 items, each defined by a series of symptoms, and measures both psychic anxiety (mental agitation and psychological distress) and somatic anxiety (physical complaints related to anxiety).

[18] The ESS is a self-administered questionnaire with eight questions. Respondents are asked to rate, on a 4-point scale (0-3), their usual chances of dozing off or falling asleep while engaged in eight different activities. The higher the ESS score, the higher that person's average sleep propensity in daily life, or their 'daytime sleepiness'. It is also used to diagnose obstructive sleep apnoea. See: https://epworthsleepinessscale.com/about-the-ess/

[19] The Berlin Questionnaire serves to estimate the likelihood of obstructive sleep apnoea, the most prevalent sleep disorder.

[20] The scale consists of 18 items relating to the subjective experience of fatigue. Each item asks respondents to place an 'X', representing how they currently feel, along a visual analogue line that extends between two extremes (e.g. from 'not at all tired' to 'extremely tired').

[21] The Fatigue Severity Scale (FSS) is a self-reported measure designed to capture the impact of fatigue on a person's daily functioning and quality of life. A set of predefined statements are answered by a Likert-scale ranging from 'Strongly disagree' to 'Strongly agree'.

[22] The Visual Analogue Scale (VAS) is a pain rating scale first used by Hayes and Patterson in 1921. Scores are based on self-reported measures of symptoms that are recorded with a single handwritten mark placed at one point along the length of a 10-cm line that represents a continuum between the two ends of the scale: 'no pain' on the left end (0 cm) of the scale and the 'worst pain' on the right end of the scale (10 cm). The values can be used to track pain progression for a patient or to compare

Scale	When to consider it?
DePaul Symptom Questionnaire-2[23] (Bedree et al., 2019)	Workers experiencing worsening of long COVID symptoms after exertion
Post-COVID-19 Functional Status scale (Klok et al., 2020)	Workers experiencing cognitive complaints, depression and anxiety
The Orthostatic Discriminant and Severity Scale (ODSS)[24] (Baker et al., 2020)	Workers experiencing discomfort and unable to stand for prolonged periods of time

Rehabilitation and workplace adjustments

The following sections describe each of the most commonly reported physical complaints linked to long COVID, self-rehabilitation, work ability and workplace adjustment.

Following clinical evaluation and rehabilitation, patient education by a rehabilitation specialist and individualised training regimes for self-rehabilitation can be provided and followed by workers. The workers' progress and the effectiveness of rehabilitation and the workplace adaptions should be reviewed (i.e. every six months) throughout the process. If symptoms do not improve, medical re-evaluation in a specialised service is recommended.

Workers should be actively encouraged to express their concerns as well as perceived physical symptoms, cognitive changes and mental health problems. Education and awareness of workers on the range of symptoms may be helpful. Occupational physicians can work together with employers, human resource (HR) managers, line managers or workers' supervisors to establish an open communication policy about these complaints and ensure that workers who are affected and their co-workers are informed. A positive workplace culture with awareness and empathy for the affected workers can help in identifying and helping workers in need.

Fatigue

Fatigue in the setting of long COVID refers to exhaustion, lack of energy and physical activity intolerance that is not proportional to physical activities and is not restored by rest or sleep. Fatigue may exist on its own or reflect underlying cardiopulmonary disease.

Post-exertional symptom exacerbation

Post-exertional symptom exacerbation or post-exertional malaise is the worsening of long COVID symptoms, typically 12 to 72 hours after performing mental or physical activities that were previously tolerated. Practically, this means that the more you attempt to do, the worse you get. Intense activity, especially aerobic, and increased physical burden will only prolong and establish post-exertional malaise in workers.

Orthostatic intolerance

Orthostatic intolerance refers to pressure and heart rate instability when standing upright. Other symptoms may be temperature dysregulation, excessive sweating and heat intolerance, lightheadedness, chest pain and gastrointestinal dysfunction. Standing upright from a sitting or prone

pain between patients with similar conditions. In addition to pain, the scale has also been used to evaluate mood, appetite, asthma, dyspepsia and ambulation.

[23] The DePaul Symptom Questionnaire-2 (DSQ-2) records the frequency and severity of myalgic encephalitis and chronic fatigue symptoms (CFS) over the past six months. Post-exertional malaise is captured following the Fukuda CFS diagnostic criteria, and DSQ-2 provides extra items to describe it, such as 'muscle fatigue after mild physical activity; worsening of symptoms after mild physical activity; and worsening of symptoms after mild mental activity'.

[24] The Orthostatic Discriminant and Severity Scale (ODSS) was developed to determine the origin of common, non-specific symptoms such as dizziness, lightheadedness and fatigue as either related to orthostatic intolerance or not.

position, especially for prolonged periods of time, may be especially harmful, as orthostatic intolerance may result in dizziness or even loss of consciousness.

Breathing impairment

Long COVID patients can experience dyspnoea in different situations (e.g. while resting, upon physical exertion). It may be constant or fluctuating, and may be accentuated by mood disorders, especially anxiety. A clinical exercise physiologist should be supervising and creating a rehabilitation programme. Dyspnoea that does not improve or worsen with rehabilitation should be re-evaluated.

Arthralgia

In long COVID patients, joint pain may be of any quality, onset and duration. Identifying the cause behind joint pain is a primary concern as it may also be related to reactive arthritis and polyarthralgia. Prescription of anti-inflammatory medication may be required, as well as further investigations. 'Pushing through' despite the pain, especially if it is increasing, will result in harm and potentially lasting consequences. Pain that increases with exercise and physical effort should prompt the worker to stop.

Image by Freepic

Sleep disturbances

Sleep disturbances may occur on their own, or due to another symptom, such as difficulty breathing that worsens at night, anxiety and depression resulting in insomnia and awakening, or arthralgia, with pain keeping the worker awake. Sleep disturbances can drain a worker of their energy, both mental and physical, and cause daytime sleepiness, a major occupational safety and health (OSH) risk in certain professions, such as professional drivers and construction workers.

An initial and a follow-up evaluation of sleepiness, sleep disturbances and the potential development of sleep disordered breathing should be made by either occupational or primary care physicians to assess sleepiness, and prompt referral to a long COVID centre, sleep clinic or a respiratory medicine clinic may be needed. Depression or anxiety should also be considered as causes for disrupted sleep.

Psychological interventions such as cognitive behavioural therapy may be reasonably effective when other measures are not effective. Persistent sleepiness and other respiratory symptoms should prompt medical re-evaluation.

Other symptoms

Long COVID may manifest in a multitude of other symptoms, in any combination and severity, for instance:

- **Problems with the sense of smell and taste:** These are frequent in those with a history of COVID-19. Rehabilitation should be attempted via olfactory training, retraining the patient in identifying smells. These symptoms may particularly affect workers who rely on their sense of smell and taste, such as cooks, and measures should be considered to address their limitations when returning to work, such as the help of colleagues.
- **Voice impairment:** Voice impairment typically affects those who had more severe disease and required admission to the intensive care unit (ICU). Voice rest and non-verbal communication methods (e.g. writing down something that would take too long to explain) may be effective and should be suggested by occupational physicians in workplace adaptation. In addition, any combination of respiratory exercises and vocal training may be considered. Voice impairment may particularly affect workers in professions where speaking is required, such as in education or call centres. General guidance on voice management exists, but more targeted strategies are needed to support workers in these professions.
- **Swallowing impairment:** As with voice impairment, swallowing impairment occurs typically in patients with more severe disease or ICU admission and intubation. It is a potentially serious

condition, as it may lead to aspiration pneumonia. A combination of education and skills training on head and body positioning, manoeuvres, and other dietary modifications (such as modifying food composition depending on whether swallowing is more difficult with solids or liquids), as well as swallowing exercises are recommended for rehabilitation. Cognitive impairment, when severe, can also contribute and should be screened for. A quiet space for having meals and devices for warming up liquids at the workplace may be required for affected workers.

Table 2 provides an overview of (self-)rehabilitation measures and workplace adjustments for the above-mentioned symptoms.

Table 2. Self-rehabilitation/rehabilitation measures and workplace adjustments for physical symptoms related to long COVID

Symptom	Self-rehabilitation, rehabilitation and personal measures	Workplace adjustments
Fatigue	Symptom-adjusted physical exercise	Phased return to work, workload review and workplace modifications
Post-exertional symptom exacerbation	Workers should determine 'energy envelope' or energy limits for physical activity and stay within it Accepting help from others with activities that have become difficult Keeping individual activity and symptom diaries[25] Light exercise within limits Recommended: swimming, Pilates, yoga, functional training, flexibility and mobility training	Energy conservation and pacing are important, for example, performing tasks from a comfortable position (e.g. sitting down rather than standing) and resting between tasks Phased return-to-work plan, with self-adjustable burden
Orthostatic intolerance	Exercise training determined by rehabilitation specialists Increasing salt uptake in foods, hydration, especially on worse days[26] Getting up slowly from a sitting or lying position Tailored physical exercise and improving fitness Contracting the muscles below the waist for about half a minute will raise blood pressure when the symptoms set in	Workload modification Avoid working at heights and on uneven surfaces because of increased risk of falling Workload and task modification to minimise time standing, breaks between long periods of standing Possibility to telework
Breathing impairment	Focus on both physical and mental aspects, training the patient on management techniques	Workload modification More frequent breaks

[25] See, for example: https://www.cdc.gov/me-cfs/hcp/clinical-care/treating-the-most-disruptive-symptoms-first-and-preventing-worsening-of-symptoms.html

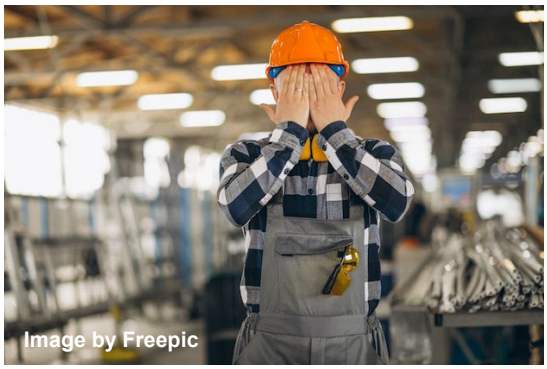
[26] See more techniques here: https://www.mayoclinic.org/diseases-conditions/orthostatic-hypotension/diagnosis-treatment/drc-20352553

Symptom	Self-rehabilitation, rehabilitation and personal measures	Workplace adjustments
	Breathing exercises, such as controlled and paced breathing Nasal breathing Physical exercise, to improve physical fitness, strength, balance, coordination and energy, when post-exercise symptom exacerbation is absent Psychological support, when anxiety or depression also contribute	Work that requires the use of respiratory protection should be avoided Consider providing a protected space for light exercise As breathlessness may not be continuous, or enhanced by stress and anxiety, psychological support should be available to workers
Arthralgia	Pain and self-management strategies for chronic pain Tailored exercise training if there is no post-exercise malaise[27]	Care must be taken not to strain a painful joint, no 'pushing through' Demanding physical work should be avoided until pain is manageable and post-exercise malaise is excluded
Voice impairment	Straining one's voice should be avoided; try humming Taking rests and trying not to speak continuously Alternative ways of communicating, such as writing notes	Additional breaks Reorganise work and provide technical means to avoid use of the voice, for example, support written communication
Swallowing impairment	Eating smaller meals throughout the day instead of full meals Being especially careful when swallowing, and preferably concentrating	Enable more frequent breaks for smaller meals or longer breaks for meals Provide quiet space for breaks, for undisturbed eating and drinking, and possibility to warm up food and liquids
Sleep disturbances	Sleep hygiene advice[28] and stress management Being physically active during the day and exercise – this will help with sleep coming naturally at night	Adjustable workload and working hours Possibility to telework Shift work reviewed by line managers, OSH professionals and HR departments, for example, changing from alternating (morning–night) shifts daily working hours (e.g. 09.00 to 17.00)

[27] See: https://www.cdc.gov/arthritis/prevention/index.html

[28] Sleep hygiene advice includes suggestions and education in behaviours that promote healthy sleep, such as fixed sleeping hours, the limitation of psychostimulants such as caffeine, nicotine and alcohol, regulating energy uptake and so on.

Cognitive and mental health issues



Long COVID affects cognition in many ways, for instance impairing memory and concentration, rendering workers unable to perform complex tasks or demanding mental tasks, described as 'brain fog'. Women, those suffering respiratory problems at COVID-19 onset and those admitted to an ICU are most vulnerable.

Poor thinking, decision-making and memory affect people who work on complex data, but cognitive complaints can affect manual workers too and put their safety and health at risk in the workplace. Older workers, who may be susceptible to age-related cognitive complaints, may experience this worse than younger ones. Poor sleep and fatigue can make cognitive problems worse. There is a stigma associated with disorders of cognition, but only if awareness of what they are, where they come from and how they can be dealt with has not been addressed.

Table 3 provides examples of symptoms and complaints related to cognition.

Table 3. Examples of symptoms and complaints that can be associated with a specific cognitive domain

Cognitive domain	Symptoms and complaints
Attention	▪ Difficulty focusing on a particular subject or trail of thought ▪ Difficulty following conversations ▪ Difficulty performing mental calculations ▪ Becoming easily distracted
Processing speed	▪ Difficulty participating in conversations ▪ Difficulty adapting to new information ▪ Difficulty adapting to and learning new skills
Executive function	▪ Increased frequency of errors during the performance of work- or daily routine-related tasks ▪ Difficulty planning ahead and organising daily or job-related routines (finance, home chores, organising workload) ▪ Difficulty switching between two tasks performed at the same time/multitasking
Language	▪ Struggling to find the correct word to describe an object ▪ Less embellished language, poor grammar, syntax and fluency ▪ Difficulty in comprehending the meaning of words ▪ Difficulty repeating words ▪ Difficulty participating in conversations due to all of the above ▪ Difficulty with written language, expressing one's thoughts and accurately describing a situation
Motor control	▪ Slow and imprecise movements ▪ Diminished capacity to operate machinery, driving ▪ Difficulty performing activities that require complex movements, e.g. dancing
Visuo-spatial and visuo-construction skills	▪ Difficulty driving ▪ Impaired depth perception ▪ Difficulty recognising faces and their characteristics ▪ Difficulty identifying objects

Cognitive domain	Symptoms and complaints
	▪ Impaired orientation, especially in newly visited places
Mental fatigue	▪ Diminished capacity to perform mental tasks
Memory	▪ Difficulty learning and recalling new information ▪ Difficulty recalling old information, such as memories ▪ Difficulty keeping appointments

Cognitive impairment due to long COVID may be persistent, and it is often complicated by mood disorders, anxiety and depression.

Several tailored rehabilitation approaches exist and can be implemented by cognitive rehabilitation specialists, typically psychologists and neurologists. Rehabilitation focuses not only on strengthening affected cognitive domains but also on helping the patient to develop mechanisms to cope with ongoing disability. Examples are provided in the discussion paper on rehabilitation from long COVID. Cognitive and physical rehabilitation are combined where possible.

Physical exercise can also help with brain health. It is important to introduce exercise gently into the daily routine, focusing on both strength and fitness-building exercises.

Mental health issues can arise as part of long COVID. To safely diagnose and manage them, a mental health professional has to be involved early on. Table 4 provides an overview of symptoms, in particular for depression and anxiety.

Table 4. Symptoms that are indicative of mental health issues

Depressive symptoms	Anxiety symptoms
▪ Persistent low mood and sadness ▪ Markedly diminished participation in formerly pleasurable activities ▪ Sleep disturbances ▪ Changes in cognition ▪ Changes in appetite ▪ Mental and physical fatigue ▪ Altered, negative perception of oneself, abilities and self-worth ▪ Thoughts of self-harm or even suicide	▪ Restlessness, uncontrollable, invasive or 'racing' thoughts ▪ Reduced attention/difficulty concentrating ▪ Feelings of dread ▪ Sleep disruption[29] ▪ Changes in appetite ▪ Irritability/confrontational attitudes

Especially cognitive and emotional complaints in the workplace are often underreported due to social bias and stigma, and particularly in younger workers and people with low job security. Specific training, for instance on mental health literacy and awareness,[30] can enable employers and co-workers to improve knowledge and skills to address these at the workplace and support the implementation of measures to ensure

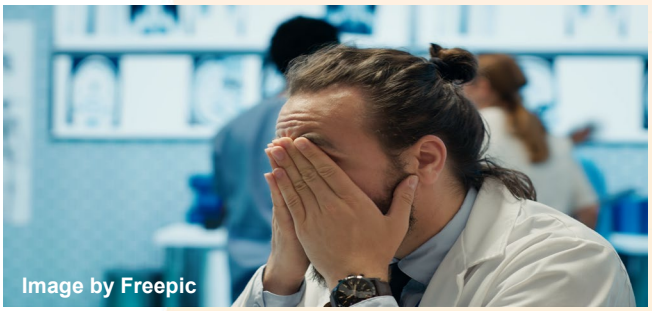


Image by Freepic

[29] Sleep disruption in anxiety disorders may manifest as difficulty falling asleep, early or sequential awakenings during a night's sleep, lessened total sleep time or non-restorative sleep.

[30] World Health Organisation (2022). *WHO guidelines on mental health at work*. Available at: https://iris.who.int/bitstream/handle/10665/363177/9789240053052-eng.pdf?sequence=1

workers can return to work despite experiencing mental health problems. EU-OSHA has published guidance specifically on this topic.[31,32]

Table 5 presents an overview of workplace adaptations and other interventions that could be implemented to address cognitive and mental health problems linked to long COVID.

Table 5. Workplace adjustments and interventions to address long COVID symptoms

Symptom	Workplace adjustments	Other interventions
Cognitive problems	Adjustable work hours, adjustable workload and phased return to work Breaking down activities into easier and/or smaller steps. It is important to start with activities that can be completed successfully before moving on to more demanding ones. Reviewing information at one's own pace Re-training the control of finer movements, coordination and balance Use of organisational aids, e.g. digital calendars Self-prompting by creating lists, setting up alarms or calendars to manage one's routine	Inform and raise awareness among employers, line managers and workers with cognitive symptoms related to long COVID
Mental health problems	Work schedule adaptations such as flexible working hours Modified assignments to reduce stress Extra time to complete tasks Educate workers on stress management	Manager training for mental health Training for workers in mental health literacy and awareness

Consideration without discrimination

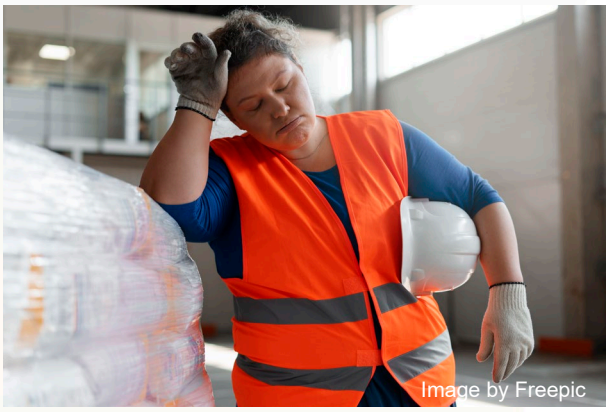
Awareness and education should be aimed at making the workplace a positive space to return to that is both safe and welcoming. There are several worker groups that may need particular attention:

- Any long COVID manifestation can lead to significant disability and introduce OSH risks. Workers affected by serious symptoms need special support. Occupational health professionals could propose individual risk assessments and discuss with HR departments, employers and line managers how to redesign job-related tasks and routines to prevent scenarios that may exacerbate symptoms (e.g. prolonged standing, exposure to continuous heat, alternating shifts, heavy physical work, etc.). Further measures that need to be considered include:
  - leaves of absence for health appointments, rehabilitation or exercise;
  - combining clinical care with vocational rehabilitation and phased return to work;
  - job simplification, workload redistribution and other reasonable adjustments such as teleworking; and
  - modifying work schedules.

[31] EU-OSHA – European Agency for Safety and Health at Work, *Guidance for workplaces on how to support individuals experiencing mental health problems*, 2024. Available at: https://osha.europa.eu/en/publications/guidance-workplaces-how-support-individuals-experiencing-mental-health-problems

[32] EU-OSHA – European Agency for Safety and Health at Work, *How workplaces can support workers experiencing mental health problems*, 2024. Available at: https://osha.europa.eu/en/publications/how-workplaces-can-support-workers-experiencing-mental-health-problems

- Women of working age are disproportionally affected by long COVID (Shah et al, 2025, Global Burden of Disease Collaborators, 2022). Their rehabilitation may be in conflict with child or elderly care. Occupational physicians can help in supporting an adapted individual return-to-work plan, rearranging workloads and schedules to accommodate work, rehabilitation and other duties.
- Workers experiencing mental health issues due to long COVID may face discrimination, feel isolated or perceive the workplace as a hostile environment. Occupational physicians can help in training employers and other workplace actors on mental health at work and raising awareness and adapting work to the needs of affected workers.



The return-to-work plan and rehabilitation

A general consensus for long COVID is that the return to work should be in phases. Workplace actors will have to acknowledge the need for rehabilitation and allocate appropriate time and means for the phased return to work and continued adaptation for those chronically affected by long COVID symptoms. All actors in the workplace should collaborate and make sure that adequate time and space are given to rehabilitation, including specialised exercise or psychological support. Everyone involved should be part of a team that designs these interventions This includes areas in the workplaces designed by OSH professionals, such as spaces for breaks and self-rehabilitation. In larger establishments, measures for workers affected by long COVID should be part of a policy that is regularly revised. EU-OSHA has previously published guidance on how workers, employers, line managers, worker representatives and OSH professionals can work together, by communicating openly and positively, to ensure a safe working environment for those returning to work, to keep them in work. More information can be found in these publications.

References

Baker, J., Paturel, J. R., Sletten, D. M., Low, P. A., & Kimpinski, K. (2020). The Orthostatic Discriminant and Severity Scale (ODSS): An assessment of orthostatic intolerance. *Clin Auton Res. 30*(1), 69-77. https://doi.org/10.1007/s10286-018-00586-5 Epub 2019 Jan 2. PMID: 30604164.

Bedree, H., Sunnquist, M., & Jason, L. A. (2019). The DePaul Symptom Questionnaire-2: A validation study. *Fatigue: Biomedicine, Health & Behavior, 7*(3), 166-179. https://doi.org/10.1080/21641846.2019.1653471

Borg, G. A. (1982). Psychophysical bases of perceived exertion. *Medicine & Science in Sports & Exercise, 14*(5), 377-381. https://journals.lww.com/acsm-msse/toc/1982/05000

Borg, E., & Kaijser, L. (2005). A comparison between three rating scales for perceived exertion and two different work tests. *Scand J Med Sci Sports, 16*(1), 57-69. https://doi.org/10.1111/j.1600-0838.2005.00448.x

Chiu, H. Y., Chen, P. Y., Chuang, L. P., Chen, N. H., Tu, Y. K., Hsieh, Y. J., Wang, Y. C., & Guilleminault, C. (2017). Diagnostic accuracy of the Berlin questionnaire, STOP-BANG, STOP, and Epworth sleepiness scale in detecting obstructive sleep apnea: A bivariate meta-analysis. *Sleep Med Rev. 36*, 57-70. https://doi.org/10.1016/j.smrv.2016.10.004. Epub 2016 Nov 5. PMID: 27919588

de Zwart, B. C. H., Frings-Dresen, M. H. W., & van Duivenbooden, J. C. (2002). Test—retest reliability of the Work Ability Index questionnaire. *Occup Med 52*(4), 177-181. https://doi.org/10.1093/occmed/52.4.177

EU-OSHA – European Agency for Safety and Health at Work, *COVID -19 infection and long COVID – guide for managers*, 2021a. Available at: https://osha.europa.eu/en/publications/covid-19-infection-and-long-covid-guide-managers

EU-OSHA – European Agency for Safety and Health at Work, *COVID-19 infection and long COVID – guide for workers*, 2021b. Available at: https://osha.europa.eu/en/publications/covid-19-infection-and-long-covid-guide-workers.

EU-OSHA – European Agency for Safety and Health at Work, *Impact of Long Covid on workers and workplaces and the role of OSH*, 2022a. Available at: https://osha.europa.eu/en/publications/impact-long-covid-workers-and-workplaces-and-role-osh

EU-OSHA – European Agency for Safety and Health at Work, *Long COVID: Challenges for prevention and measures to diminish the effects on OSH*, 2022b. Available at: https://oshwiki.osha.europa.eu/en/themes/long-covid-challenges-prevention-and-measures-diminish-effects-osh

EU-OSHA – European Agency for Safety and Health at Work**,** *Long COVID: assessing work ability, adapting the workplace and supporting rehabilitation – A practical guide for the workplace,* 2025. Available at: https://osha.europa.eu/en/publications/long-covid-assessing-work-ability-adapting-workplace-and-supporting-rehabilitation-practical-short-guide-workplace

EU-OSHA – European Agency for Safety and Health at Work, *Long COVID: worker rehabilitation, assessment of work ability and return to work support,* 2025. Available at: https://osha.europa.eu/en/publications/long-covid-worker-rehabilitation-assessment-work-ability-and-return-work-support

EU-OSHA- European Agency for Safety and Health at Work, OSH wiki article, *Identification of long COVID, assessment of work ability, rehabilitation and workplace adaptations,* 2025. Available at: Identification of long COVID, assessment of work ability, rehabilitation and workplace adaptations

Global Burden of Disease Long COVID Collaborators. Estimated Global Proportions of Individuals With Persistent Fatigue, Cognitive, and Respiratory Symptom Clusters Following Symptomatic COVID-19 in 2020 and 2021. JAMA. 2022;328(16):1604–1615. doi:10.1001/jama.2022.18931

Hamilton, M. (1960). A rating scale for depression. *J Neurol Neurosurg Psychiatry, 23*(1), 56-62. https://doi.org/10.1136/jnnp.23.1.56

Hlatky, M. A., Boineau, R. E., Higginbotham, M. B., Lee, K. L., Mark, D. B., Califf, R. M., Cobb, F. R., & Pryor, D. B. (1989). A brief self-administered questionnaire to determine functional capacity (the Duke Activity Status Index). *Am J Cardiol. 64*(10), 651-654. https://doi.org/10.1016/0002-9149(89)90496-7

Ilmarinen, J. (2007). The Work Ability Index (WAI). *Occupational Medicine, 57*(2), 160. https://doi.org/10.1093/occmed/kqm008

Johns, M. W. (1991). A new method for measuring daytime sleepiness: The Epworth Sleepiness Scale. Sleep, 14(6), 540-545. https://doi.org/10.1093/sleep/14.6.540

Klok, F. A., Boon, G. J. A. M., Barco, S., Endres, M., Geelhoed, J. J. M., Knauss, S., Rezek, S. A., Spruit, M. A., Vehreschild, J., & Siegerink, B. (2020). The Post-COVID-19 Functional Status scale: A tool to measure functional status over time after COVID-19. Eur Respir J. 56(1), 2001494. https://doi.org/10.1183/13993003.01494-2020

Krupp, L. B., LaRocca, N. G., Muir-Nash, J., & Steinberg, A. D. (1989). The fatigue severity scale. Application to patients with multiple sclerosis and systemic lupus erythematosus. *Arch Neurol 46*(10), 1121-1123. https://doi.org/10.1001/archneur.1989.00520460115022

Lee, K. A., Hicks, G., & Nino-Murcia, G. (1991). Validity and reliability of a scale to assess fatigue. *Psychiatry Research, 36*(3), 291-298. https://doi.org/10.1016/0165-1781(91)90027-M

Nasreddine, Z. S., Phillips, N. A., Bédirian, V., Charbonneau, S., Whitehead, V., Collin, I., Cummings, J. L., & Chertkow, H. (2005). The Montreal Cognitive Assessment, MoCA: A brief screening tool for mild cognitive impairment. *J Am Geriatr Soc, 53*(4), 695-699. https://doi.org/10.1111/j.1532-5415.2005.53221.x [Erratum in: J Am Geriatr Soc 2019; https://agsjournals.onlinelibrary.wiley.com/doi/10.1111/jgs.15925]

Shah, D.P., Thaweethai, T., Karlson, E.W., et al. Sex Differences in Long COVID. JAMA Netw Open. 2025;8(1):e2455430. doi:10.1001/jamanetworkopen.2024.55430

Thompson E. (2015). Hamilton Rating Scale for Anxiety (HAM-A). *Occup Med (Lond). 65*(7), 601. https://doi.org/10.1093/occmed/kqv054

World Health Organisation (2023). *Clinical management of COVID-19: Living guideline, 18 August 2023*. https://www.who.int/publications/i/item/WHO-2019-nCoV-clinical-2023.2